

REMARKS

Claims 1-20 are now pending in the application. The Examiner is respectfully requested to reconsider and withdraw the rejections in view of the amendments and remarks contained herein. Accordingly, Applicants believe that the claim amendments presented herein place the claims in condition for allowance. At a minimum, the claim amendments herein place the claims in better form for appeal.

REJECTION UNDER 35 U.S.C. § 103

Claims 1, 2, 4-9, 11-16, 19 & 20 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Wheeler (U.S. Pat. No. 6,277,509) in view of Matsuoka (U.S. Pub. No. 2004/0062964) and Ogami (U.S. Pub. No. 2003/0064266). Claims 10 & 17 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Wheeler (U.S. Pat. No. 6,277,509) in view of Matsuoka (U.S. Pub. No. 2004/0062964) and Ogami (U.S. Pub. No. 2003/0064266) as applied to claims 1 & 16 and further in view of Buzzelli (U.S. Pat. No. 4,168,349). Claims 3 & 18 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Wheeler (U.S. Pat. No. 6,277,509) in view of Matsuoka (U.S. Pub. No. 2004/0062964) and Ogami (U.S. Pub. No. 2003/0064266) and Buzzelli (U.S. Pat. No. 4,168,349) as applied to claims 2 & 17 respectively and further in view of Adams (U.S. Pub. No. 2004/0151962). These rejections are respectfully traversed.

Independent Claim 1 recites "an **enclosure encompassing** at least . . . **a coolant reservoir**, and a hydrogen vent configured **to vent hydrogen from the enclosure**." The rejection acknowledges that Wheeler does not disclose a hydrogen vent in the coolant reservoir, but asserts one skilled in the art would be motivated to

provide a hydrogen vent in the coolant reservoir in view of Matsuoka and Ogami. Any vent disclosed in Matsuoka or Ogami, however is not located in a coolant reservoir. To the extent Matsuoka and Ogami disclose a gas vent, it is located in a **fuel reservoir** wherein fuel and water are mixed, not a coolant reservoir. Specifically, Matsuoka discloses a gas-liquid separation membrane 21 [0032] which separates unnecessary gas such as carbon dioxide contained in exhaust gas from the water to be mixed with the fuel. This exhaust gas is discharged through piping to a vent to the outside [0037]. Accordingly, the gas that exits through the vent 23 of Matsuoka comes **only** from the mixing buffer tank. Moreover, Matsuoka does not even disclose a coolant reservoir.

Similarly, the portions of Ogami cited in the rejection [0023-0026] are directed to bubbles in water that is mixed with fuel. Therefore, neither Matsuoka, nor Ogami disclose or suggest locating a hydrogen vent in **a coolant reservoir** as recited in Claim 1, since the problem being solved by any vent of these references is the removal of gasses from a **water and fuel mixture**. Thus, even if one skilled in the art were motivated to modify Wheeler as suggested by this rejection, it would result in a venting of gas from a fuel reservoir (or a supply line to the fuel reservoir), **not the coolant reservoir as claimed**.

Accordingly, Applicants believe that the invention as recited in independent Claim 1 is not disclosed or suggested by the cited references, either singly or in combination, as asserted in this rejection. Applicants understand that neither Buzzelli nor Adams are being cited as disclosing a hydrogen vent in a coolant reservoir enclosure as recited in Claim 1. In addition, Applicants further believe that any vent of Buzzelli and Adams is likewise not related to a coolant reservoir and is not related to an MEA fuel cell as

additionally recited in Claim 1. Consequently, Applicants additionally believe that each of Claims 2-10 are likewise patentable over these references as asserted in these rejections for at least the same reasons as discussed above.

Independent Claim 11 recites "creating an enclosure **around a fuel cell stack** which captures hydrogen that leaks, directly or indirectly, from the hydrogen fuel flow path; and **passively maintaining** the level of hydrogen which leaks into the enclosure **below a concentration level of about 4 percent.**" As discussed above, the references cited in these rejections (Matsuoka and Ogami) as disclosing a vent in a fuel cell enclosure only disclose the removal of gasses from the **fuel reservoir** including a water and fuel mixture.

In addition, the cited portions of Ogami do not provide any detail about the gas vent or its location. Since Ogami is concerned with the removal of gas from the fuel mixture prior to entering the fuel cell stack, it does not disclose or suggest placing the vent in an enclosure around the fuel cell stack as recited in Claim 11. In addition to being located in the fuel reservoir, the vent detail provided in Matsuoka associates the gas-liquid separation membrane with a valve 25 [Figs. 1-5A, and 6] or with a pump P5 [Figs. 5B, 7, and 8]. When the pump P5 is provided, the concentration of the gas is not passively maintained as recited in Claim 11, since the pump must be actively operated. This is also likely true when the valve 25 is provided. In other words, the valve 25 must be opened in order to vent any gas, which most likely requires an active operation. Even if the valve 25 is passive, however, it would need to rely on the build-up of pressure within the enclosure to open it. Therefore, there is no disclosure or suggestion for the valve 25 of Matsuoka to open in order to maintain a hydrogen level **below a**

concentration level of about 4 percent as recited in Claim 11. Ogami likewise does not provide such a disclosure or suggestion, since neither of these references are concerned with the removal of hydrogen. Thus, even if one skilled in the art were motivated to modify Wheeler as suggested by this rejection, it would result in **actively** maintaining a hydrogen level and/or maintaining a hydrogen level **above** a concentration of about 4 percent.

Accordingly, Applicants believe that the invention as recited in independent Claim 11 is not disclosed or suggested by the cited references, either singly or in combination, as asserted in this rejection. Applicants further understand that neither Buzzelli nor Adams are being cited as disclosing a hydrogen vent in an enclosure around a fuel cell stack as recited in Claim 11. In addition, Applicants believe that any vent of Buzzelli and Adams is not related to any enclosure around a fuel cell stack and is not related to an MEA fuel cell as additionally recited in Claim 1. Consequently, Applicants also believe that each of Claims 12-20 are likewise patentable over these references as asserted in these rejections for at least the same reasons as discussed above.


CONCLUSION

It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office Action and the present application is in condition for allowance. Thus, prompt and favorable consideration of this amendment is respectfully requested. If the Examiner

believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (248) 641-1600.

Respectfully submitted,

Dated: November 6, 2007

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